

REMARKS

In the Office Action, the Examiner rejected claims 1-18 under 35 U.S.C. §102(b) as being unpatentable over United States Patent 5,117,277 issued to YuYama, et al. ("YuYama"). In this Amendment, Applicants have amended the claims 2, 3, 5, 6, 8-10, 12, 13, 16 and 18, to correct certain informalities. Applicants have not added or canceled any claim. Accordingly, claims 1-18 will be pending after entry of this Amendment.

I. Rejection of Claims 1-18 under §102(b)

In the Office Action, the Examiner rejected claims 1-18 under §102(b) as being unpatentable over YuYama. Claims 2-18 are dependent directly or indirectly on independent claim 1. Claim 1 recites an integrated circuit ("IC") layout that includes a net with routable elements. The IC layout further includes a first set of interconnect lines for connecting the routable elements of the net, where the interconnect lines have ends that are in the shape of partial non-quadrilateral polygons.

In the Office Action, the Examiner stated that YuYama's abstract states that "the plurality of first and second wirings have at their ends connection portions of a regular hexagonal shape or a circular shape for a partial non-quadrilateral polygons". *See the Office Action, page 2.* For at least two reasons, Applicants respectfully submit that YuYama does not disclose, teach or even suggest such an IC layout that has a set of interconnect lines for connecting the routable elements of the net, where the interconnect lines have ends that are in the shape of partial non-quadrilateral polygons.

First, The shapes of YuYama's connection portions are not partial non-quadrilateral polygons. YuYama describes "signal wirings 22 that can be electrically connected to one

another” and “connection portions 21A of the signal wirings have a size greater than the width of the signal wirings 21 by an amount that corresponds to at least the size of the connection holes 31 and to the masking margin in the step of forming the connection holes 31 and the signal wirings 21. That is, the signal wirings 21 have a so-called dog-bone shape”. *See column 7, line 40-51.* That is, as further shown in Figures 1 and 6 of YuYama, the interconnect line ends 21A are single straight or curved lines. Hence, YuYama does not disclose, teach or even suggest interconnect lines that have ends that are in the shape of partial non-quadrilateral polygons.

Second, YuYama describes an IC in which “the signal wirings of the first and second layers are electrically connected to each other at their crossing portions through connection holes”. *See YuYama, column 2, lines 7-10.* Specifically, YuYama specifies that “these connections are made through connection holes 31 formed in the interlayer insulating film 41”. *See YuYama column 7, lines 42-44, and Figure 1.* Thus, YuYama’s connection portions are not interconnect line ends. Rather, the connection portions described by YuYama are metallization surrounding vias and not the ends of interconnect lines.

Furthermore, the shapes of YuYama’s connection portions surrounding vias are not partial non-quadrilateral polygons. YuYama describes ICs that include signal wirings that have at their ends connection portions of a regular hexagonal, octagonal, or circular shape. *See YuYama, column 7, lines 45-52, column 12, lines 44-47 and Figure 1.* Each wiring includes several connection portions for connecting with signal wirings from other connection portions. These connection portions are regular polygons, that is, plane polygons which are both equilateral and equiangular. For example, YuYama in column 7, lines 50-52 describes “connection portions 21A have the shape of a regular hexagon”. *See also, YuYama, column 7, line 45 through column 8*

line 66. Specifically, YuYama specifies “when the signal wirings 21 and the signal wirings 22 intersect at the aforementioned angle, there is formed a rhombus with all sides having the same length”. See, *YuYama*, column 7, lines 32-34. Therefore, YuYama’s connection portions are not partial non-quadrilateral polygons. While YuYama describes “connection portions” as polygons in many instances, none of these connection portions have ends that are in the shape of partial non-quadrilateral polygons, as recited in claim 1. Hence, YuYama does not disclose, teach or even suggest an IC layout where the interconnect lines have ends that are in the shape of partial non-quadrilateral polygons.

Accordingly, Applicants respectfully submit that YuYama does not render claim 1 unpatentable. As claims 2-18 are dependent directly or indirectly on claim 1, Applicants respectfully submit that claims 2-18 are patentable over YuYama for at least the reasons that were discussed above for claim 1. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejection of claims 1-18.

CONCLUSION

In view of the foregoing, it is submitted that all the claims, namely claims 1-18, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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